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The first record of *Scopula butleri* Prout, 1913 from Russian Far East (Lepidoptera: Geometridae, Sterrhinae)

A. Expósito-Hermosa & J. Viidalepp

Abstract

The first record of *Scopula butleri* Prout, 1913 in Russian Far East is documented, the structure of female genitalia of this species are described and analyzed.
KEY WORDS: Lepidoptera, Geometridae, Sterrhinae, female genitalia, *Scopula butleri*, Russia.

Primera cita de *Scopula butleri* Prout, 1913 del Lejano Oriente ruso (Lepidoptera: Geometridae, Sterrhinae)

Resumen

Se documenta el primer registro de *Scopula butleri* Prout, 1913 en el Lejano Oriente de Rusia, se describe y analiza la estructura de la genitalia femenina de esta especie.
PALABRAS CLAVE: Lepidoptera, Geometridae, Sterrhinae, genitalia hembra, *Scopula butleri*, Rusia.

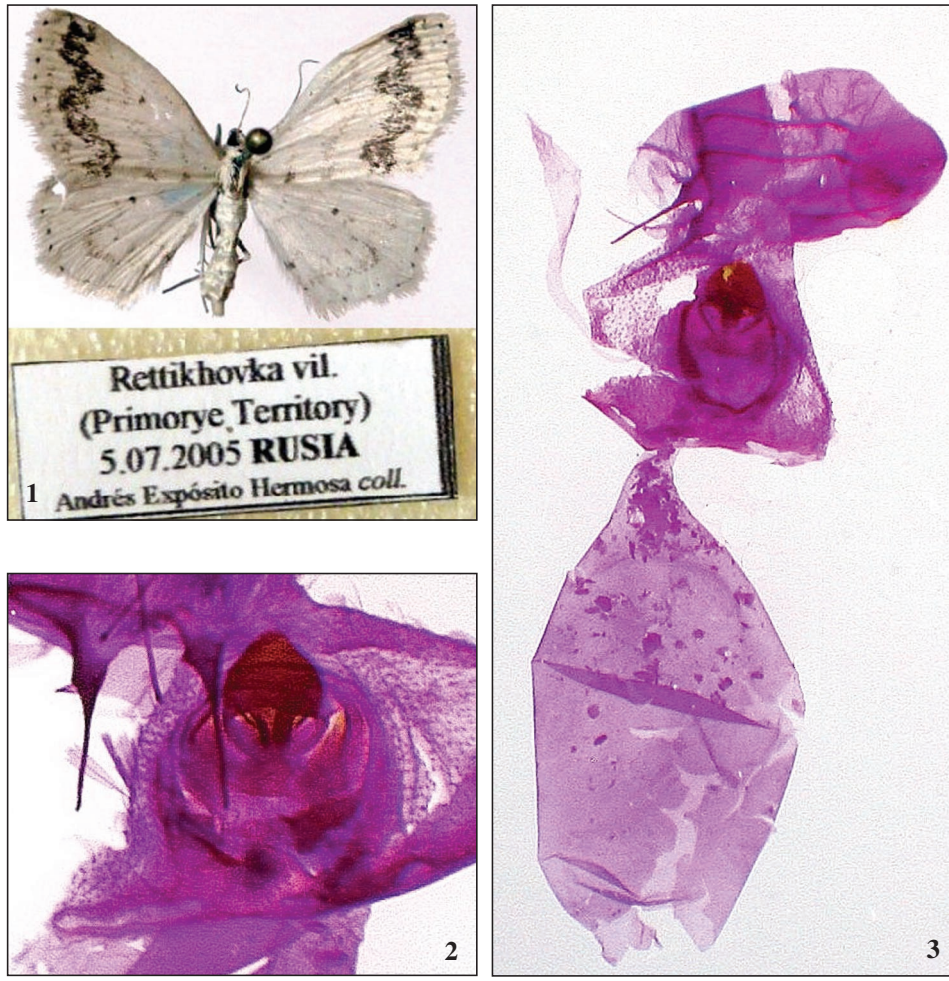
Introduction

The composition of the genus *Scopula* Schrank, 1802 in fauna of the Russian Far East is relatively well known, having been studied by VIIDALEPP (1996, 2006) and recently revised by SINEV (2008) and LELEJ (2016), including *Scopula ornata* (Scopoli, 1763), and *S. decorata* ([Denis & Schiffermüller], 1775), two species resembling *Scopula butleri* Prout, 1913 in their wing pattern. The last species is added to the checklist now.

The species was initially described as *Craspedia insolata* (Butler, 1889) (BUTLER, 1889: 109-110, pl. 136, fig. 17) from Dharmsala, North India. LEECH (1897: 20) described some years later *Acidalia satsumaria* (Leech, 1897) from Satsuma in Japan. PROUT (1913: 78), treating *Craspedia* Hübner, [1825] 1816 as a younger synonym of *Acidalia* Treitschke, 1825, and *Acidalia insolata* (Butler, 1889) as a younger homonym of *Acidalia insolata* (Felder & Rogenhofer, 1875), proposed for the junior homonym a replacement name: *Acidalia butleri* Prout, 1913.

Prout stressed the white ground colour and grey-brown pattern of wings of [*Acidalia*] *butleri* as differentiation characteristics against *A. satsumaria* which has similar wing pattern but brownish ground colour PROUT (1913: 78, pl. 5e). However, later PROUT (1934-1935: 220; 1935: 46; 1939: 198) he has treated the name *Acidalia butleri* Prout, 1913 as an unnecessary replacement name and restored *Scopula insolata* (Butler) as a valid name. YAZAKI (1994: 11) listed *Scopula insolata insolata* (Butler, 1889) from Nepal. HOLLOWAY (1997) described a subspecies *Scopula insolata aequibrachiata* Holloway, 1997 from Sarawak, Borneo. The last moth is light brown colored and has subequal, long lateral processes (brachia, or cerata) to the eighth sternite of male and differs from the

Indian type of *S. insolata* which has its left cera short and curved inward (as in the species of the *Scopula ornata* species group).



Figures 1-3.– 1. Female adults of *Scopula butleri* Prout, 1913 in coll. Andrés Expósito-Hermosa (AEH). **2-3.–** Female genitalia of *Scopula butleri* Prout. **2.** Genitalias AEH 3291. **3.** AEH 3295 (fig. 3).

Interestingly, PARSONS *et al.* (1999: 843) treated *Scopula butleri* Prout, 1913 as a valid name for Butler's *S. insolata*, listed *S. aequibrachia* Holloway, 1997 as a subspecies of *S. butleri*, and placed *S. satsumaria* Leech, 1897 as a synonym of *S. butleri aequibrachiata.* Holloway, 1997. SIHVONEN (2005: 33), SCOBLE & HAUSMANN (2007) as well as CHOI & KIM (2016) thus refer to *S. butleri* in their works.

An eighth sternite with the left process strongly curved and short is illustrated by INOUE (1982: pl. 321, fig. 1) for japanese *S. satsumaria* and by CHOI & KIM (2016: figs 1B, 2D, 2E, 2F) for *S.*

butleri from Korea. Consequently, *S. aequibrachiata* Holloway should be treated as a valid species with both processes to the male eighth sternite long and straight as in HOLLOWAY (1997: fig. 208).

Analysis

Material: 1 ♀, RUSSIA, Primorye Territory, Rettikhovka vil. 5-VII-2005 slide AEH 3291 and 1 ♀, 4-VII-2005 slide AEH 3295 *in* coll. Andrés Expósito-Hermosa.

The two adult specimens have a wing expansion of 14 and 16 mm respectively. The ground colour of wings is a white tone dotted with some dark scales that give it a more matte appearance. Apical points are visible on all wings. The postmedial bands are wide, more conspicuous and uniform than in *S. decorata*, somewhat irregular in shape, incurved towards the discal cell and along the anal fold in forewings and are more weakly marked in hind wings. Delicate basal, median and terminal bands parallel to the termen in forewings. In hind wings, a terminal band curves in the disc area without reaching the screw. There are blackish points along the termen coinciding with the termination of the veins on both wings. The underside of wings is similar, but with more muted drawings.

Female genitalia of *S. butleri* are described here the first time (figs 2-3): slides AEH 3291 (fig. 2) and AEH 3295 (fig. 3). The ovipositor papillae are roundish, the anterior and posterior apophyses short. The ductus bursae is short and corpus bursae short pyriform. The signum is lacking, a rare case in this genus, but known for the species of the *Scopula cajanderi* (Herz, 1905) group HAUSMANN (2004: 545). It has also a very striking shape of the antrum (fig. 3) with the appearance of "face of person: helmet, nose and eyes".

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